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EXAMINER

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2643

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15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/189,768

Applicant(s)

NARUSAWA ET AL.

Examiner

Lun-See Lao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-21, 24-28, 30-33 and 36-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This action is in response to applicant's amendment filed on 02-25-2004. Claims 1-39 are pending. New Claims 37-39 have been added. Claims 1-8,12-17,21,24,27-28,31-33 and 36 have been amended.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 25, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Glick (US PAT. 5,283,819).

Regarding claim 25, Glick teaches a control method for an audio device, comprising:

creating a graphic user interface for controlling the audio device to allow selection of an audio source with respect to an audio device (inputs 28, 32 or 72, col. 6, lines 29-43) and to allow mixing (mixer 70) of audio data of the selected audio source (inputs 28, 32 or 72) together with other audio data created by a computer (input from synthesizer 33, col. 12, lines 26-41) (see col. 34, line 22 - col.35, line 7); outputting control data to the audio device based on operation of the graphical user interface

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(selectable outputs, col. 6, lines 29-43); receiving information regarding operation of the graphical user interface as the control data, and providing the control data to the graphical user interface (see col.34 line 22-col.35 line 7); and inherently outputting the audio data to the audio device (speaker).

Regarding claim 26, Glick teaches a program code storage device, comprising:
a machine-readable storage medium; and machine-readable program code, stored on the machine-readable storage medium, the machine-readable program code having instructions to create a graphic user interface for controlling the audio device, to allow selection of an audio source with respect to the audio device (inputs 28, 32 or 72, col. 6, lines 29-43), and to allow mixing (mixer 70) of audio data of the selected audio source (inputs 28, 32 or 72) together with other audio data created by a computer (input from synthesizer 33, col. 12, lines 26-41) (see col. 34, line 22 - col.35, line 7);

output control data to the audio device based on operation of the graphic user interface (selectable outputs, col. 6, lines 29-43);

receive information regarding operation of the graphic user interface as the control data, and provide the control data to the graphic user interface (col.35 line 16-col.36 line 10); and inherently output the audio data to the audio device.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 11-12, 18-20, 24 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timis (US PAT 5,792,971) in view of Glick (US PAT 5,283,819).

Regarding claim 1, Timis teaches an audio system comprising:

an audio device (see fig.1, 19, 152,180);

a computer for creating computer audio data and control data for operating the audio device (see col.5 line 25-57); and

a data transmission bus for linking the audio device and the computer together to transmit data there between (see col.6 line 23-47),

wherein said computer has an output for outputting the computer audio data and the control data to the audio device via the data transmission bus (see col.6 line 23-63),

and Wherein said audio device, including the first system portion (see fig.1, 180, 152) and the second system portion (1), and said computer are located in separate devices, the separate devices being capable of operating independently (see col.5 line 58-col.6 line 22);

and wherein said audio device includes;

a first system portion (see fig.1, 180,152) for processing audio source audio data that is provided by an audio source other than the computer, but Timis does not teach clearly a second system portion (see fig.1, 1) for processing the compute, audio data created by computer (such as, the audio source file be stored on a hard disk for editing), and mixing circuit for performing mixing of the audio source audio data and the

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computer audio data, which are respectively processed by the first and the second sound system portions.

However, Glick teaches a second system portion (see fig.1, 1) for processing the compute, audio data created by computer (sound synthesizer 33 which generates different sound by computer itself, see col.12 lines 26-41), and mixing circuit for performing mixing (70) of the audio source audio data and the computer audio data, which are respectively processed by the first and the second sound system portions (see col.5 line 25-col.6 line 43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in to Glicki to provide computing technology with multimedia and telecommunication technologies for a wide variety of entertainment purposes.

Regarding claim 2, Timis teaches an audio system comprising:

an audio device (see fig.1, 19);

a computer for creating computer audio data and control data for operating the audio device (see col.5 lines 25-57); and

data transmission means for linking the audio device and the computer together to transmit data there between (see col.6 lines 25-47),

wherein said computer has an output for outputting the computer audio data and the control data to the audio device via the data transmission means (see col.6 lines 23-63), and Wherein said audio device, including the first system portion (see fig.1, 180, 152) and the second system portion (1), and said computer are located in separate

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devices, the separate devices being capable of operating independently (see col.5 line 58-col.6 line 22);

and wherein said audio device includes

a first system portion (see fig.1, 180,152) for performing signal processing on the computer audio data from the computer, or for performing the signal processing on audio source audio data of an audio source different from the computer audio data, or the audio source audio data selectively provided by one of a plurality of audio sources different from the computer, But Timis does not clearly teach a second system portion (see fig.1, 1) for performing simple signal processing, which is simple as compared with the signal processing of the first system portion, on the computer audio data created by the computer (sound synthesizer 33 which generates different sound by the computer itself, see col.12 lines 26-41), a mixing circuit for performing mixing of the audio source audio data and the computer audio data, which are respectively processed by the first and second system portions and a switch for turning off the mixing of the mixing circuit when the first system portion performs the signal processing selectively on the computer audio data of the computer.

However, Glick teaches a second system portion (see fig.1, 20) for performing simple signal processing, which is simple as compared with the signal processing of the first system portion, on the computer audio data created by the computer(sound synthesizer 33 which generates different sound by the computer itself, see col.12 lines 26-41), mixing circuit (70) for performing mixing of the audio source audio data and the computer audio data, which are respectively processed by the first and second system

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portions (see col.5 line 25-col.6 line 43) and switch for turning off (control by program) the mixing of the mixing circuit when the first system portion performs the signal processing selectively on the computer audio data of the computer (see col.5 line 25-col.6 line 43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in Glick to provide computing technology with multimedia and telecommunication technologies for a wide variety of entertainment purposes.

Regarding claims 3-4, Timis teaches that the audio system of the computer further includes

display unit (see fig.1,3) for a display unit an operation panel for operating the audio device,

a serial bus interface (see fig.4,112,170) for outputting the control data to an audio device via the data transmission bus on the basis of operation of the operation panel (see col.7 line 37-col.8 line 35),

a control data processing unit (see fig.1,1) for receiving information regarding operation made by the audio device via the data transmission means as the control data so as to reflect the control data in content of the operation panel, and

an audio data processing unit (microprocessor) for outputting the computer audio data to the audio device via the data transmission bus (see col.8 line 35-col.9 line 46).

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Regarding claims 5-8, Timis teaches that the audio system wherein the data transmission bus (see fig.3, 206) is configured by a single serial bus cable and its interface (see fig.1).

Regarding claim 11, Timis teaches a machine readable media for storing an audio control program that causes a computer to actualized an audio control system comprising:

means for outputting control data to the audio device via an external serial bus (connection between computer and MINI (keyboard; slider)) means on the basis of operation of the graphical user interface means (slider);

means for receiving information regarding operation of the audio device as the control data via the external serial bus means (connection between computer and MINI keyboard; slider) so as to reflect the control data in content of graphical user interface (see col.7 line 25-col.8 line 67); and

means for outputting the computer audio data to the audio device via the external serial bus means (connection between computer and MINI (keyboard; slider)). Timis does not clearly teach a graphical user interface means (see fig.3, 182) for operating the audio device, the graphical user interface means actualizing an operation to select an audio source for the audio device and an operation to perform mixing on audio source audio data of the selected audio source and computer audio data created and provided by the computer.

However, Glick teaches a graphical user interface means for operating the audio device, the graphical user interface means actualizing an operation to select an audio

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source for the audio device and an operation to perform mixing on audio source audio data of the selected audio source and computer audio data created inherently (such as, audio source file be stored on a hard disk for editing) and provided by the computer (see col.34 lines 22-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in Glick to provide computing technology with multimedia and telecommunication technologies for a wide variety of entertainment purposes.

Regarding claim 12, Timis teaches an audio system, comprising:

an audio device for producing first audio data (see fig.1, 180) in connection with at least one audio source (see col.6 lines 5-22),

external serial bus means (connection between computer and MINI keyboard; slider); and

wherein the audio device is in a device separate from the personal computer and the audio device performs mixing between the first audio data (180) and the second audio data (19 and hard disk), which is transmitted thereto via the external serial bus (connection between computer and MINI (keyboard; slider)), on the basis of the control data transmitted from the personal computer, so that speaker produces sound based on mixing results (see col.5 line 57-col.6 line22). Timis does not teach clearly a personal computer (fig.1, 1) for creating second audio data and control data.

However, Glick teach a personal computer (fig.1, 1) for creating (sound synthesizer 33 which generates different sound by the computer itself, see col.12 lines 26-41) second audio data and control data (see col.5 line 25-col.6 line 45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in Glicki to provide computing technology with multimedia and telecommunication technologies for a wide variety of entertainment purposes.

Regarding claims 18-20, Timis teaches that the audio source corresponds to a tuner or a recording media (hard drive (see col.5 lines 55-67)); and audio system wherein the personal computer (see fig.1, 1) uses graphical user interface (GUI) (see fig.3, 182) for creation of the control data for controlling operation of the audio device and the signal processing corresponds to a graphic equalizer process and/or a sound field control process (see col.6 line 63-col.7 line33).

Regarding claim 24, Timis teaches an audio system, comprising:

a computer (see fig.1 1);

an audio device (19,180);

a data communications bus (control by software and headwear) for allowing communications between the computer (1) and the audio device (19,180), wherein (see col.5 line 45-57)

said computer includes a control data processing unit (such as cpu and dsp) for outputting control data for controlling the audio device and for outputting audio data to

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the audio device via the data communications bus based on the operation of an operation panel (such as a window for cd-rom) (see col.5 line 58-col.6 line 22),

a display unit (3) for displaying an operation panel (such as displaying a window for the cd-rom) for controlling the audio device (see (fig.4a-5c) and col.7 line 54-67),

a serial bus interface for receiving information regarding operation of the operation panel (see fig.3, 182) via the data communications means as the control data, thus providing the control data to the operational panel (see col.8 line 13-36); and

an audio data processing unit (such as cpu and dsp) for outputting the audio data to the audio device via the data communications means (col.8 line 50-65). Timis does not teach clearly a audio device includes mixing circuit for mixing the audio data supplied from the computer together with other audio data given from a different audio source, wherein said audio device, including the mixing circuit, and said computer are located in independent and separate devices.

However, Glick teaches an audio device includes mixing means (see fig.1 (70)) for mixing the audio data (such as hard disk or internal cd) supplied from the computer together with other audio data given from a different audio source (12) (see col.5 line 25-col.6 line 43); and wherein said audio device, including the mixing circuit (70), and said computer are located in independent and separate devices (see col.13 lines 40-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in to Glicki to provide to

combine computing technology with multimedia and telecommunication technologies for a wide variety of entertainment purposes.

Regarding claim 30, Timis teaches the audio system of the audio data performs digital mixing of the first audio data (from internal cd (19)) and the second audio data (from audio file which be stored on hard disk) (see col.13 line 5-60).

6. Claims 9-10, 27-29, 32, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timis (US PAT 5,792,971) in view of Heyi (US PAT 5,774,567).

Regarding claim 9, Timis teaches an audio device comprising
at least one audio source (see fig.1, 19);
a digital interface for inputting computer audio data supplied from a computer (see fig.1,1),

audio processing means for processing audio source audio data provided by the audio source (see fig.1, (180,152)) and the computer audio data (19) provided by the computer;

speaker means (see fig.3) for producing sound based on output of the mixing.
Timis does not clearly teach a digital mixing means for performing digital mixing between the audio source audio data processed by the audio processing means and the computer audio data.

However, Heyi teaches a digital mixing means (see fig.3, (adder)) for performing mixing between the audio source audio data processed by the audio processing means and the computer audio data (see col.4 line 18-65).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in Heyi to provide digital sound signals, independently adjusting the level of each of the digital sound signals for each of a plurality of output lines, and mixing the adjusted digital sound signals that correspond to each of the plurality of output lines.

Regarding claim 10, Timis teaches an audio device comprising:

input means for inputting audio source audio data (see fig.1, 180,152) supplied from an audio source different from a computer;

a digital interface for inputting computer audio data (see fig.1, 19) supplied from the computer; and speaker means for producing sound based on output of the mixing means (see fig.3). Timis does not clearly teach a digital mixing means for performing digital mixing between the audio source audio data input by the input means and the computer audio data which is input thereto via the interface.

However, Heyi teach a digital mixing means (see fig.3 (adder)) for performing digital mixing between the audio source audio data input by the input means and the computer audio data which is input thereto via the interface (see col.4 line 18-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in to Heyi to provide digital sound signals, independently adjusting the level of each of the digital sound signals for each of a plurality of output lines, and mixing the adjusted digital sound signals that correspond to each of the plurality of output lines.

Regarding claims 27-28, Timis does not clearly teach the audio system of the data transmission means transmits digital data between the audio device and the computer, and the mixing means is a digital mixing circuit that performs digital mixing of the audio source audio data and the computer audio data.

However, Heyi teaches the audio system of the data transmission means transmits digital data between the audio device and the computer (see fig.5 (int-cd and ext-cd)), and the mixing means is a digital mixing circuit (add see fig.3, 110, 120, 122, 124) that performs digital mixing of the audio source audio data and the computer audio data (see col.6 line 7-col.7 line 20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in Heyi to provide digital sound signals, independently adjusting the level of each of the digital sound signals for each of a plurality of output lines, and mixing the adjusted digital sound signals that correspond to each of the plurality of output lines.

Regarding claim 32, Timis does not clearly teach the audio system of the external serial bus transmits the second audio data and the control data digitally.

However, Heyi teaches the audio system of the external serial bus means (see fig.5 (external-cd)) transmits the second audio data and the control data digitally (col. 6 line 9-col.7 line 20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in to Heyi to provide digital sound signals, independently adjusting the level of each of the digital sound signals for

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each of a plurality of output lines, and mixing the adjusted digital sound signals that correspond to each of the plurality of output lines.

Regarding claim 36, Timis does not teach clearly the audio system of the data communications bus allows digital communications between the computer and the audio device, and the mixing circuit is a digital mixing circuit for mixing the audio data supplied from the audio device and the second audio device supplied from the computer.

However, Heyi teaches the audio system of the data communications bus (see fig.5 (int-cd and ext-cd)) allows digital communications between the computer and the audio device, and the mixing circuit is a digital mixing circuit for mixing the audio data supplied from the audio device and the second audio device supplied from the computer (see col.6 line 8-col.7 line19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Timis in Heyi to provide digital sound signals, independently adjusting the level of each of the digital sound signals for each of a plurality of output lines, and mixing the adjusted digital sound signals that correspond to each of the plurality of output lines.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silfvast (US PAT 5,524,060) in view of Heyi (US PAT 5,774,567).

Regarding claim 15, Silfvast teaches an audio system, comprising:

an audio device for producing first audio data in connection with at least one audio source(input lines 45 and fig.2, col.5 lines 58-67),
an external serial bus (serial link 57,60)(fig.5), and
a personal computer (see fig.5,54), for creating second audio data (see figs. 7a and 7b)) and control data (control voltage Vc transferred from computer 54) (see col.12 line54-col.13 line59),

wherein the audio device (see fig.5 amplifier, 51, 53) is located in a device separate from the computer (54) and further includes selecting unit (see fig.8 switch 143) for selecting one of the first audio data and the second audio data, a signal processing block for performing signal processing on output of the selecting unit (see col.4 line 63-col.5 line 7). Silfvast does not teach clearly an adjustment unit for performing adjustment on the second audio data with respect to sampling parameters digital mixing circuit for performing digital mixing between output of the signal processing block and output of the adjustment unit, and digital-to-analog converter for converting a result of the digital mixing to analog signals, and speakers for producing the sound based on the analog signals.

However, Heyl teaches an adjustment unit (see fig.3, 110,112,114) for performing adjustment on the second audio data with respect to sampling parameters digital mixing circuit (adder, 118,120,122,124) for performing digital mixing (118, 120, 122, 124) between output of the signal processing block and output of the adjustment unit (110,112,114,116), and digital-to-analog converter for converting a result of the

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digital mixing to analog signals, and speakers for producing the sound based on the analog signals (see col.4 line 18-col.5 line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Silfvast in Heyi to provide digital sound signals, independently adjusting the level of each of the digital sound signals for each of a plurality of output lines, and mixing the adjusted digital sound signals that correspond to each of the plurality of output lines.

8. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timis (US PAT 5,792,971) as modified by Glick (US PAT. 5,283,819) as applied to claim 12 above and further in view of Fuchu (US PAT 6,314,326).

Regarding claims 16-17, Timis fails to teach that the external serial bus means corresponds to a universal serial bus; and the external serial bus corresponds to an IEEE 1394 serial bus.

However, Fuchu teaches that an audio system of the external serial bus means corresponds to a universal serial bus; and the external serial bus corresponds to an IEEE 1394 serial bus (see col.7 line 38-col.8 line 65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Fuchu into Timis and Glick to provide a visual interpretation of how a signal is being processed, to control with high resolution and accuracy, and to be able to return to successful characteristics and parameters as a starting point for new application.

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9. Claims 13-14 and 21-23, 31, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silfvast et al (US PAT 5,524,060) in view of Timis (US PAT 5,792,971) and Glick (US PAT. 5,283,819).

Regarding claim 13, Silfvast teaches an audio system, comprising:

an audio device for producing first audio data in connection with at least one audio source (input lines 45) (fig. 2, col. 5, lines 58-67),

an external serial bus (serial link 57, 60) (fig. 5), and

a personal computer (54), for producing control data (control voltage Vc transferred from computer 54) (col. 12, line 54 – col. 13, line 59),

wherein the auto device (see fig.5, 51 and 59) is in a device separate from the computer (see fig.5, 54) and further includes selecting unit for selecting (switch 143) one of the first audio data and the second audio data, which is transmitted thereto via the external serial bus (57), signal processing block for performing (DSP 129) signal processing on output of the selecting unit, a first digital-to-analog converter for converting (DAC 147) output of the signal processing block to first analog signals, and an analog mixing circuit for performing analog mixing (VCA 125) between the first analog signals and a second analog signals, whereby speaker (output / speaker) produces sound based on the result of the analog mixing (fig. 8). See col. 4, line 63 - col. 5, line 67; col. 6, lines 6-19; col. 9, lines 1-35; col. 12, line 54 – col. 13, line 59.

While Silfvast teaches that audio input includes multiple input lines from a variety of sources (col. 4, line 63 – col. 5, line 7), and illustrates in detail (fig. 8) one particular input line of such audio input and the processing thereof, Silfvast does not teach that

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the second audio data created from the personal computer, nor the associated second digital-to-analog converter for converting audio data from the personal computer to second analog signals.

However, Timis teaches an audio system with a variety of audio input sources, one of which is a personal computer (music workstation) which created second audio data (such as, audio source file be stored on a hard disk for editing) and produces digital audio data (output from 204) which is then converted to analog format (D/A converter 160) (col. 6, line 64 – col. 7, line 9).

Therefore, it would have been obvious to allow the personal computer of Silfvast to be an audio input source to produce the second audio data and include a second digital-to-analog conversion means for converting the second audio data from the PC to second analog signals. It would have been obvious to combine the teachings of Silfvast and Timis because this would have provided improved standarization (MIDI standard) of the communications between the devices of the audio system of Silfvast (Timis, col. 1, lines 46-57).

Further, Glick teaches a personal computer, for creating second audio data (sound synthesizer 33 which generates different sound by the computer itself, see col.12 lines 26-41) and control data (see col.5 line 25-col.6 line 43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Silfvast in Glick to provide computing technology with multimedia and telecommunication technologies for a wide variety of entertainment purposes.

Regarding claim 14, Silfvast teaches the audio device further comprises switch means for disconnecting (switches 137, 143) the second digital-to-analog converter from the analog mixing means when the selection means selects the second audio data (col. 13, lines 6-24).

Regarding claim 21, it is covered by claim 13. Note the equivalence of audio device audio data / first audio data, and computer audio data / second audio data. Silfvast as modified by Timis further teaches output means for outputting (Timis, sound output device 162), inherently data transmission bus to allow communication between the computer and the audio device. Note the discussion of claim 13 for a motivation to combine.

Regarding claim 22, it is covered by claim 13. Silfvast further teaches interface for inputting computer audio data inherently (such as, audio source file stored on a hard disk for editing) created by and supplied from a computer (link 57, RAM 131) (col. 12, lines 54-63).

Regarding claim 23, note discussion of claim 13. In particular, Silfvast as modified by Timis and Glick teach

input means for inputting audio source audio data supplied from an audio source different from a computer (audio input 53) (Silfvast, col. 5, lines 58-67);

interface for inputting computer audio data supplied from the computer (serial link 57, RAM 131) (Silfvast, col. 12, lines 54-63),

selection means for selecting one of the audio source audio data and the computer audio data (Silfvast, switch 143);

signal processing means for performing signal processing on output of the selection means (Silfvast, DSP 129);

first digital-to-analog conversion means for converting output of the signal processing means to first analog signals (Silfvast, DAC 147);

second digital-to-analog conversion means (Timis, D/A converter 160) for converting the computer audio data from the personal computer (Timis, output from processing unit 204) to second analog signals (col. 6, line 64 – col. 7, line 9),

analog mixing means for performing mixing between the first analog signals and the second analog signals (Silfvast, VCA 125),

speaker means for producing sound based on output of the mixing means (Silfvast, output / speaker). See Silfvast, col. 4, line 63 - col. 5, line 67; col. 6, lines 6-19; col. 9, lines 1-35; col. 12, line 54 – col. 13, line 59. Note discussion of claim 13 for a motivation to combine the teachings of Silfvast and Timis.

Regarding claim 31, Silfvast teaches the audio system of the external serial bus (see fig.5 (serial link 57,60)) transmits the second audio data and the control data digitally (see col.9 line 25-35).

Regarding claim 33, Silfvast teaches the audio system of the data transmission bus transmits the computer (such as audio file be stored on a hard disk by headwear) audio data and the control data digitally to the audio device (see fig.5,59 and 51 and col.9 line 25-35).

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10. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haroun (US PAT 5,787,259) in view of Glick (US PAT 5,283,819).

Regarding claim 37, Haroun teaches an audio system comprising,
an audio device (see fig.1(25,30,35));

a computer (15) for creating computer audio data (by software providing sound effect see col.1 lines 59-65) and control data for operating the audio device; and

a data transmission bus for linking the audio device and the computer together to transmit data therebetween, wherein said computer has an output for outputting the computer audio data and the control data to the audio device via the data transmission bus (see col.4 line 5-47),

and wherein said audio device includes first system portion for processing audio source audio data that is provided by a tuner unit integrated in the audio device (see col.8 line 48-65), a second system portion (15) for processing the computer audio data created by the computer (software providing sound effect and see col.1 lines 59-65), and wherein said audio device (25,30,35), including the first system portion and the second system portion (15), and said computer are located in separate devices, the separate devices being capable of operating independently (see fig.1 and see col.4 lines 5-60). Haroun does not clearly teach a mixing circuit for performing mixing of the audio source audio data from the tuner unit and the computer audio data, which are respectively processed by the first and second sound system portions.

However, Glick teaches a mixing circuit (see fig.1, 70) for performing mixing of the audio source audio data from the tuner unit and the computer audio data, which are

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respectively processed by the first and second sound system portions (see col.5 line 25-col.6 line 43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Haroun in Glick to provide computing technology with multimedia and telecommunication technologies for a wide variety of entertainment purposes.

11. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haroun (US PAT 5,787,259) in view of Heyl (US PAT 5,774,567).

Regarding claim 38 Haroun teaches an audio system, comprising:

an audio device (see fig.1, 25,30,35) for producing first audio data in connection with at least one audio source,

an external serial bus (see abstract); and

a personal computer, for creating second audio data (by software providing sound effect and see col.1 lines 59-65) and control data (see col.1 line 15-col.2 line 17), wherein the audio device is located in a device separate from the computer, and includes a tuner unit as a first audio source for producing the first audio data (see col.8 lines 48-65). Haroun does not clearly teach a selecting unit for selecting one of the first audio data and the second audio data, a signal processing block for performing signal processing on output of the selecting unit, an adjusting unit for performing adjustment on the second audio data with respect to sampling parameters, a digital mixing circuit for performing digital mixing between output of the signal processing block and output of

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the adjustment device, and a digital-to-analog converter for converting result of the digital mixing to analog signals, and speakers for producing the sound based on the analog signals.

However, Heyl teaches a selecting unit (see fig.3, 110, 112,114,116) for selecting one of the first audio data and the second audio data, a signal processing block for performing signal processing on output of the selecting unit, an adjusting unit (110-116) for performing adjustment on the second audio data with respect to sampling parameters, a digital mixing circuit (adder, 118-124) for performing digital mixing between output of the signal processing block and output of the adjustment device, and a digital-to-analog converter for converting result of the digital mixing to analog signals, and speakers for producing the sound based on the analog signals (see col.4 line 18- col.5 line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Haroun in Heyl to provide digital sound signals, independently adjusting the level of each of the digital sound signals for each of a plurality of output lines, and mixing the adjusted digital sound signals that correspond to each of the plurality of output lines.

12. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haroun (US PAT 5,787,259) in view of Silfvast (US PAT 5,524,060).

Regarding claim 39, Haroun teaches an audio system, comprising:
an audio device (see fig.1, 25,30,35);

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a computer for creating computer audio data (by software providing sound effects see col.1 lines 59-65) and control data for operating the audio device (see col.1 line 15-col.2 line 17);

a data transmission bus to allow communications between the computer and the audio device (see fig.1);

wherein said computer has an output interface for outputting the computer audio data and the control data to the audio device via the data transmission bus (see col.4 lines 5-60),

while said audio device is in a device (25,30,35) separate from the computer (15) and includes

a tuner unit inherently for producing audio device audio data (see col.8 lines 47-65);

a second system portion including a second digital-to-analog converter (145) for converting the computer audio data given from the personal computer to second analog signals (see col.5 line 47-col.6 line 30). Haroun does not clearly teach a first system portion including a selection unit for selecting one of the audio device audio data and the computer audio data, a signal processing block for performing signal processing on output of the selection device, a first digital-to-analog converter for converting output of the signal processing device to first analog signals, and an analog mixing circuit for performing analog mixing between the first analog signal and the second analog signals.

However, Silfvast teaches a first system portion including a selection unit (see fig.8, 143) for selecting one of the audio device audio data and the computer audio data, a signal processing block for performing signal processing on output of the selection device (DSP, 129), a first digital-to-analog converter (145) for converting output of the signal processing device to first analog signals,

and an analog mixing circuit (125) for performing analog mixing (see fig.8) between the first analog signal and the second analog signals (see col.4 line 63-col.5 line 67, col.6 lines 6-19, col.9 lines 1-35 and col.12 line 54-col.13 lines 59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Haroun in Silfvast to provide for generating an output audio signal by selectively varying gain applied to an input audio signal.

Response to Arguments

13. Applicant's arguments filed 2/25/2004 have been considered but are moot in view of the new grounds of rejection.

Regarding applicant's argument of creating a graphic user interface for controlling the audio device to allow selection of an audio source with respect to an audio device and to allow mixing of audio data of the selected audio source together with other audio data created by a computer (remark page 18 second paragraph), this is met by Glick who teaches allowing selection of an audio source with respect to an audio device (inputs 28, 32 or 72, col. 6, lines 29-43) and allowing mixing (mixer 70) of audio data of

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the selected audio source (inputs 28, 32 or 72) together with other audio data created by a computer (input from synthesizer 33, col. 12, lines 26-41) [it is noted that the synthesizer resides and operates in the computer]. As discussed in col. 34, line 22 - col.35, line 7, the graphical user interface of Glick supports audio input and output operations including selection and mixing (col. 34, lines 40-60), thus meeting the claimed limitation of creating a graphic user interface for controlling the audio device to allow selection of an audio source with respect to an audio device and to allow mixing of audio data of the selected audio source together with other audio data created by a computer.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9306


Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao, Lun-See whose telephone number is (703) 305-2259. The examiner can normally be reached on Monday-Friday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

Lao, Lun-See
Patent Examiner
US Patent and Trademark Office
Crystal Park 2
(703305-2259)


DUC NGUYEN
PRIMARY EXAMINER